

**EXHIBIT 5**

**January 9, 2007 Administrative Consent Order  
(SH-NJ-BB000058-000072)**



**State of New Jersey**

DEPARTMENT OF ENVIRONMENTAL PROTECTION

**JON S. CORZINE**  
Governor

**LISA P. JACKSON**  
Commissioner

Program Interest # 004739

IN THE MATTER OF THE  
SHELL SERVICE STATION, RIDGEWOOD  
AND  
SHELL OIL COMPANY and  
MOTIVA ENTERPRISES, LLC.

ADMINISTRATIVE CONSENT  
ORDER

This Administrative Consent Order is issued pursuant to the authority vested in the Commissioner of the New Jersey Department of Environmental Protection (hereinafter "the Department" or "DEP") by N.J.S.A. 13:1D-1 through -19, the Solid Waste Management Act, N.J.S.A. 13:1E-1 through -91, and the Spill Compensation and Control Act, N.J.S.A. 58:10-23.11 et seq., and the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., and duly delegated to the Assistant Director, Division of Remediation Support, Oversight Resources Allocation Element, pursuant to N.J.S.A. 13:1B-4.

**FINDINGS**

1. The Shell Service Station located at Route 17 South and Franklin Turnpike in the Village of Ridgewood, and known as Block 4703, Lot 14 on the tax map of the Village of Ridgewood, Bergen County, (hereinafter "the Site") is the subject of an Administrative Order and Notice of Civil Administrative Penalty Assessment dated August 31, 2000.

2. The Site is located in an area of the state where residents use ground water as a source of drinking water. The Village of Ridgewood operates several municipal wells, which provide potable water to approximately 65,000 residents in Ridgewood and three adjacent municipalities, the Boroughs of Glen Rock, Midland Park and Wycoff. Four of these municipal wells, the Twinney, Walthery, Paramus and East Ridgewood wells, are located near the Site. The Twinney well is located up gradient of the Site and water from this well is mixed with water from the Walthery well, which is located immediately down gradient from the Site. The Paramus well and East Ridgewood well are located further down gradient from the Site.

3. Shell Oil Company ("Shell") is a Delaware corporation, with its principal corporate offices located at One Shell Plaza, Houston, Texas.

4. Motiva Enterprises, LLC ("Motiva") is a limited liability company organized under the laws of the State of Delaware, with its main offices located at 1100 Louisiana Street, Suite 2200, Houston, Texas. Motiva is a joint venture of Texaco Refining and Marketing (East) Inc., Saudi Refining, Inc. and SOPC

Holdings East, LLC, combining major elements of the three companies' Eastern and Gulf Coast U.S. refining and marketing businesses:

5. From February 25, 1985 until September 4, 1998, Shell owned the Site.
6. On September 4, 1998, Motiva acquired title to the Site.
7. From May 5, 1986 until July 19, 1999, Shell owned the underground storage tank system at the Site.
8. On or about July 20, 1999, Motiva assumed ownership of the underground storage tank system at the Site.
9. Saini Auto & Gas Co., Inc., entered into a franchise agreement with Shell on October 7, 1993, and since that time has operated a service station at the Site.
10. On August 31, 2000, the Department issued an Administrative Order/Notice of Civil Administrative Penalty Assessment to both Shell and Motiva for the alleged failure to conduct remediation at the Site.
11. By entering this Administrative Consent Order, Shell and Motiva neither admits to any fact, fault or liability under any statute or regulation concerning the condition of the Site nor waives any rights or defenses with regard to the Site except as specifically provided in this Administrative Consent Order.
12. The scope of the investigation and remediation required by this Administrative Consent Order will include all contaminants at the above referenced Site, and all contaminants which are emanating from or which have emanated from the Site.

#### ORDER

##### I. Remedial Action

13. Within forty-five (45) calendar days after receipt of the Department's written comments on the Off-Site Remedial Action Work Plan dated July 2005, or as otherwise approved in writing by the Department, Shell and Motiva shall : 1) agree to modify the Off-Site Remedial Action Work Plan to conform to the Department's comments and agree to submit the modified Off-Site Remedial Action Work Plan to the Department; or 2) submit a written response to the Department's written comments of the Off-Site Remedial Action Work Plan. The determination as to whether or not the modified Off-Site Remedial Action Work Plan, as resubmitted, conforms to the Technical Requirements for Site Remediation, N.J.A.C. 7:26E, and the Department's written comments and is otherwise acceptable to the Department shall be made solely by the Department in writing.

14. Upon receipt of the Department's written final approval of the Off-Site Remedial Action Work Plan, Shell and Motiva agree to implement the approved Off-Site Remedial Action Work Plan in accordance with the schedule therein.

15. Shell and Motiva agree to submit to the Department a Remedial Action Report (hereinafter "RA Report") in accordance with the Technical Requirements for Site Remediation, N.J.A.C. 7:26E, the RA Work Plan and the schedule therein.

16. If upon review of the RA Report the Department determines that additional remediation is required, Shell and Motiva agree to conduct additional remediation as directed by the Department and agree to submit subsequent RI Reports and RA Reports, as applicable.

17. Within thirty (30) calendar days after receipt of the Department's written comments on the RA Report, or longer as authorized by the Department, Shell and Motiva agree to modify the RA Report to conform with the Department's comments and agree to submit the modified RA Report to the Department. The determination as to whether or not the modified RA Report, as resubmitted, conforms to the Technical Requirements for Site Remediation, N.J.A.C. 7:26E, and the Department's written comments and is otherwise acceptable to the Department shall be made solely by the Department in writing.

II. Additional Remedial Investigation and Remedial Action

18. If at any time that this Administrative Consent Order is in effect the Department determines that the prevailing standards in N.J.A.C. 7:26E are not being achieved or that additional remediation is required to protect the public health and safety and the environment, Shell and Motiva agree to conduct such additional remediation as the Department directs.

III. Progress Reports

19. Shell and Motiva agree to submit quarterly progress reports which detail the status of Shell's and Motiva's compliance with this Administrative Consent Order to the Department in accordance with N.J.A.C. 7:26E-6.6(b). Shell and Motiva agree to submit the first progress report on or before the last calendar day of the fourth calendar month following the effective date of this Administrative Consent Order. Shell and Motiva agree to submit a progress report thereafter on or before the last calendar day of the month following the next three calendar months being reported. Shell and Motiva may request that the Department allow progress reports be submitted semi-annually or annually.

IV. Project Coordination

20. Shell and Motiva agree to submit to the Department all documents required by this Administrative Consent Order, including correspondence relating to force majeure issues, by delivery with an acknowledgement of receipt from the Department. The date that the Department executes the

acknowledgement will be the date the Department uses to determine Shell's and Motiva's compliance with the requirements of this Administrative Consent Order and the applicability of penalties and any other remedies available to the Department.

21. Within seven (7) calendar days after the effective date of this Administrative Consent Order, Shell and Motiva agree to submit to the Department the name, title, address and telephone number of the individual who shall be Shell's and Motiva's technical contact for the Department for all matters concerning this Administrative Consent Order and Shell and Motiva agree that the person listed below is Shell's and Motiva's agent for the purpose of service for all matters concerning this Administrative Consent Order. In the event the Department determines that a meeting concerning the remediation of the Site is necessary, the Department will provide notification to this agent of the date, time and place of such meeting. Shell and Motiva agree to ensure that the agent is available for and participates in such meeting.

Doug Wiemer  
Shell Oil Company  
One Shell Plaza  
P.O. Box 2463  
Houston, TX 77252-2463  
713-241-3633

22. Within seven (7) days after the effective date of this Administrative Consent Order the Department will identify the individual who will be the Department's contact for all matters concerning this Administrative Consent Order. Unless the Department otherwise directs in writing, Shell and Motiva agree to submit all payments and copies of all documents required by this Administrative Consent Order to the Department's contact.

23. Shell and Motiva agree to notify, both verbally and in writing, the Department's contact person identified pursuant to Paragraph 22, above, at least fourteen (14) calendar days prior to the initiation of any field activities at the Site which are related to remediation, development or redevelopment.

24. The Department will consider a written request for an extension of time to perform any requirement in this Administrative Consent Order, provided that Shell and Motiva submit any extension request to the Department two weeks prior to any applicable deadline to which the extension request refers.

V. Remediation Funding Source and Remediation Funding Source Surcharge

25. Shell and Motiva agree to establish and maintain for the duration of this Administrative Consent Order a remediation funding source in an amount equal to the Department-approved estimate of the remediation costs related to compliance with this Administrative Consent Order, including all operation, maintenance and monitoring costs of all engineering and institutional controls, pursuant to N.J.A.C. 7:26E-8, used to remediate the Site, pursuant to N.J.A.C. 7:26C-7. Shell and Motiva agree that the initial remediation funding source amount is \$353,000.

26. Shell and Motiva agree to pay an annual remediation funding source surcharge if required to do so pursuant to N.J.A.C. 7:26C-7.8.

VI. Project Cost Review

27. Beginning three hundred sixty-five (365) calendar days after the effective date of this Administrative Consent Order, and annually thereafter on the same calendar day, Shell and Motiva agree to submit to the Department a detailed review of all remediation costs expended by Shell and Motiva to comply with this Administrative Consent Order, including:

- a) A detailed summary of all monies spent to date pursuant to this Administrative Consent Order;
- b) The detailed estimated remediation costs required to comply with this Administrative Consent Order, including all operation, maintenance and monitoring costs; and
- c) The reason for any changes from the previously submitted cost review.

28. At any time after Shell and Motiva submit the first cost review pursuant to the preceding paragraph, Shell and Motiva may request the Department's approval to reduce the amount of the remediation funding source to reflect the remaining remediation costs necessary to comply with obligations under this Administrative Consent Order. If the Department grants written approval to such a request, Shell and Motiva may amend the amount of the then existing remediation funding source consistent with that approval.

29. If the estimated costs of meeting Shell's and Motiva's obligations in this Administrative Consent Order at any time increase to an amount greater than the remediation funding source, Shell and Motiva agree to within thirty (30) calendar days after receipt of written notice of the Department's determination, increase the amount of the then existing remediation funding source or provide an additional remediation funding source such that the total amount equals the Department's approved estimated cost.

30. If Shell and Motiva implement a remedial action at the Site that includes institutional and/or engineering controls pursuant to N.J.A.C. 7:26E-8, Shell and Motiva agree to maintain a remediation funding source, pursuant to N.J.A.C. 7:26C-7, in an amount that is sufficient to pay for the operation, maintenance and monitoring of the engineering and institutional controls

VII. Oversight Cost Reimbursement

31. Within thirty (30) calendar days after receipt from the Department of a written summary of the Department's oversight costs, including all accrued interest incurred pursuant to paragraph 33, determined pursuant to N.J.A.C. 7:26C-9.3, Shell and Motiva agree to submit to the Department a cashier's or certified

check payable to the "Treasurer, State of New Jersey" and submitted with DEP Form 062A, for the full amount of the Department's oversight costs, for the period being charged.

32. Shell and Motiva agree that its agreement here to pay the Department's oversight costs will continue after the Department's termination of this Administrative Consent Order as provided herein for those oversight costs that have accrued prior to that termination.

33. Shell and Motiva also agree to pay interest on the unpaid balance of oversight costs, beginning at the end of the thirty (30) calendar day period established in the preceding paragraph, at the rate established by Rule 4:42 of the current edition of the Rules Governing the Courts of the State of New Jersey.

VIII. Settlement of Penalties

34. Shell and Motiva shall pay a civil administrative penalty of \$1,200,000.00 for the alleged violations identified in the Administrative Order/Notice of Civil Administrative Penalty Assessment issued on August 31, 2000 and for the economic benefit gained for allegedly not complying in a timely fashion with the Department's remediation requirements for the Site. Shell and Motiva shall pay the civil penalty within fifteen (15) days of execution of the Administrative Consent Order. Shell and Motiva shall make the penalty payment by a certified or cashier's check payable to the "Treasurer, State of New Jersey" submitted with DEP form 062A. Payment of this penalty shall not relieve Shell's or Motiva's obligation to fully comply with this Administrative Consent Order. Shell and Motiva shall mail or otherwise deliver the penalty payment to the Section Chief, Cost Recovery/Natural Resource Damages Section, Department of Law and Public Safety, Division of Law, Richard J. Hughes Justice Complex, 25 Market Street, P.O. Box 093, Trenton, New Jersey 08625-0093.

IX. Reservation of Rights

35. The Department reserves the right to unilaterally terminate this Administrative Consent Order in the event that the Department determines that Shell and Motiva have violated the terms of this Administrative Consent Order. Before the Department unilaterally terminates this Administrative Consent Order, the Department will notify Shell and Motiva in writing of the obligation(s) which they have not performed, and Shell and Motiva shall have thirty (30) calendar days after receipt of such notice to perform such obligation(s).

36. Nothing in this Administrative Consent Order precludes the Department from seeking civil or civil administrative penalties or any other legal or equitable relief against Shell and Motiva for violations of this Administrative Consent Order. In any such action brought by the Department under this Administrative Consent Order for injunctive relief, civil, or civil administrative penalties, Shell and Motiva may raise, among other defenses, a defense that Shell and Motiva failed to comply with a decision of the Department, made pursuant to this Administrative Consent Order, on the basis that the Department's decision was arbitrary, capricious or unreasonable. If Shell and Motiva are successful in establishing such a defense based on the



administrative record, Shell and Motiva shall not be liable for penalties for failure to comply with that particular requirement of the Administrative Consent Order. Although Shell and Motiva may raise such defenses in any action initiated by the Department for injunctive relief, Shell and Motiva hereby agree not to otherwise seek review of any decision made or to be made by the Department pursuant to this Administrative Consent Order and under no circumstances shall Shell and Motiva initiate any action or proceeding challenging any decision made or to be made by the Department pursuant to this Administrative Consent Order.

37. This Administrative Consent Order shall not be construed to affect or waive the claims of federal or State natural resources trustees against any person for damages or injury to, destruction of, or loss of natural resources, unless expressly provided herein, and then only to the extent expressly provided herein.

38. Except as otherwise stated in this Administrative Consent Order, nothing herein shall be construed as limiting any legal, equitable or administrative remedies which Shell and Motiva may have under any applicable law or regulation. In any enforcement action the Department initiates pursuant to this Administrative Consent Order, Shell and Motiva reserve any defenses which the Spill Compensation and Control Act, *Matter of Kimber Petroleum Corp.*, 110 N.J. 69 (1988) or their amendments, supplements and progeny allow.

39. Except as otherwise set forth herein, by the execution of this Administrative Consent Order the Department does not release Shell and Motiva from any liabilities or obligations Shell and Motiva may have pursuant to any other authority, nor does the Department waive any of its rights or remedies pursuant thereto.

X. Force Majeure

40. If any event specified in the following paragraph occurs which Shell and Motiva believe or should believe will or may cause delay in the compliance or cause non-compliance with any provision of this Administrative Consent Order, Shell and Motiva agree to notify the Department in writing within seven (7) calendar days of the start of delay or knowledge of the anticipated delay, as appropriate, referencing this paragraph and describing the anticipated length of the delay, the precise cause or causes of the delay, any measure taken or to be taken to minimize the delay, and the time required to take any such measures to minimize the delay. Shell and Motiva agree to take all necessary action to prevent or minimize any such delay.

41. The Department will extend in writing the time for performance for a period no longer than the delay resulting from such circumstances as determined by the Department only if:

- a) Shell and Motiva have complied with the notice requirements of the preceding paragraph;
- b) Any delay or anticipated delay has been or will be caused by fire, flood, riot, strike or other circumstances beyond the control of Shell and Motiva; and



c) Shell and Motiva have taken all necessary action to prevent or minimize any such delay.

42. The burden of proving that any delay is caused by circumstances beyond the control of Shell and Motiva and the length of any such delay attributable to those circumstances shall rest with Shell and Motiva.

43. "Force Majeure" shall not include the following:

- a) Delay in an interim requirement with respect to the attainment of subsequent requirements;
- b) Increases in the cost or expenses incurred by Shell and Motiva in fulfilling the requirements of this Administrative Consent Order;
- c) Contractor's breach, unless Shell and Motiva demonstrate that such breach falls within the above paragraphs; and
- d) Failure to obtain access required to implement this Administrative Consent Order, unless denied by a court of competent jurisdiction.

XI. Penalties

44. Shell and Motiva agree to pay penalties for their violations of this Administrative Consent Order and for their violations of a deed notice or declaration of environmental restriction that is part of a remedial action implemented pursuant to the order, according to the amounts and conditions in this section.

45. Shell and Motiva agree:

- a) That each violation of any requirement, condition or deadline in this Administrative Consent Order constitutes an additional, separate, and distinct violation to which penalties apply;
- b) That each day that a violation continues constitutes an additional, separate, and distinct violation to which penalties apply;
- c) To pay interest, at the rate set forth in the New Jersey Court Rules, R. 4:42-11(a), on any unpaid penalty pursuant to this Administrative Consent Order commencing on the first day after it has agreed to pay a penalty pursuant to this Administrative Consent Order;
- d) That nothing in this Administrative Consent Order shall prevent the simultaneous accrual of separate penalties for separate violations of this Administrative Consent Order;
- e) That their payment of a penalty pursuant to this Administrative Consent Order does not alter Shell's and Motiva's responsibility to complete any requirement of this Administrative Order; and

f) To regard payments of penalties pursuant to this Administrative Consent Order as payments of civil or civil administrative penalties pursuant to the Spill Compensation And Control Act, N.J.S.A. 58:10-23.11 through - 23.14.

46. Shell and Motiva agree to pay a penalty for all violations of this Administrative Consent Order beginning on the first calendar day following the day the noncompliance begins and continually thereafter until the final day of correction of the noncompliance, in the following amounts:

<u>Calendar Days After Due Date</u>	<u>Penalty</u>
1 - 7 days	\$ 500 per calendar day
8 - 14 days	\$ 1,000 per calendar day
15 days and over	\$ 2,500 per calendar day

47. The Department will provide Shell and Motiva with written notice of each violation, including a description of the conditions of this Administrative Consent Order that Shell and Motiva have violated, the date that Shell and Motiva were to have completed each task, the duration of the violation, and the amount of the penalty that is due and owing pursuant to Paragraph 46, above.

48. Shell and Motiva agree to pay each penalty required by this Administrative Consent Order by cashier's check or certified check payable to the "Treasurer, State of New Jersey," accompanied by DEP Form 062A and a letter referencing this Administrative Consent Order and the violations for which Shell and Motiva are submitting the payment within 30 calendar days after their receipt of a penalty payment demand from the Department pursuant to Paragraph 47, above.

49. Shell and Motiva agree that nothing herein shall limit the Department's ability, upon Shell's and Motiva's failure to pay a penalty pursuant to this Administrative Consent Order, to pursue civil or civil administrative penalties or take any other enforcement action for any violations of this Administrative Consent Order.

50. Shell and Motiva are jointly and severally liable for penalties for violations of this Administrative Consent Order.

51. Shell and Motiva agree to pay a penalty in the amount of the economic benefit (in dollars) which Shell and Motiva have realized as a result of not complying, or by delaying compliance, with the requirements of this Administrative Consent Order, including the following:

- a) The amount of savings realized from avoided capital or noncapital costs resulting from the violation;
- b) The return earned or that may be earned on the amount of the avoided costs;
- c) All benefits accruing to the violator as a result of a competitive market advantage enjoyed by reason of the violation; and

d) All other benefits resulting from the violation.

52. Shell and Motiva agree that the Department will consider the following factors in determining a penalty for economic benefit:

- a) The amount of capital investments required, and whether they are one-time or recurring;
- b) The amount of one-time nondepreciable expenditures;
- c) The amount of annual expenses;
- d) The useful life of capital;
- e) Applicable tax, inflation and discount rates;
- f) The amount of low interest financing, the low interest rate, and the corporate debt rate; and
- g) Any other factors relevant to economic benefit.

53. If the total economic benefit was derived from more than one violation, Shell and Motiva agree that the Department may apportion the total economic benefit amount among the violations from which it was derived so as to increase each civil administrative penalty assessment to an amount no greater than \$50,000 per violation.

XII. Dispute Resolution

54. In the event a conflict arises between Shell and Motiva and the Department, Shell and Motiva may institute the Department's dispute resolution process at N.J.A.C. 7:26C-1.4

XIII. General Provisions

55. In addition to the Department's statutory and regulatory rights to enter and inspect, Shell and Motiva agree to allow the Department and its authorized representatives access to all areas of the Site Shell and Motiva have access to, at all times, for the purpose of monitoring Shell's and Motiva's compliance with this Administrative Consent Order and/or to perform any remedial activities Shell and Motiva fail to perform as required by this Administrative Consent Order. Shell and Motiva agree that their agreement here to provide the Department with access will continue after the Department's termination of this Administrative Consent Order pursuant to Paragraph 35, above.

56. Shell and Motiva agree to not construe any informal advice, guidance, suggestions, or comments by the Department, or by persons acting on behalf of the Department, as relieving Shell and Motiva of their obligation to obtain written approvals as required herein.

57. Shell and Motiva agree to provide a copy of this Administrative Consent Order to each contractor and subcontractor retained to perform the work required by this Administrative Consent Order and agree to condition all contracts and subcontracts entered for the performance of such work upon compliance with the terms and conditions of this Administrative Consent Order. Shell and Motiva agree to be responsible to the Department for ensuring that its contractors and subcontractors perform the work herein in accordance with this Administrative Consent Order.

58. Nothing in this Administrative Consent Order relieves Shell and Motiva from complying with all other applicable laws and regulations. Compliance with the terms of this Administrative Consent Order shall not excuse Shell and Motiva from obtaining and complying with any applicable federal, state or local permits, statutes, regulations and/or orders while carrying out the obligations imposed by this Administrative Consent Order. This Administrative Consent Order shall not preclude the Department from requiring that Shell and Motiva obtain and comply with any permits, and/or orders issued by the Department under the authority of the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., the Solid Waste Management Act, N.J.S.A. 13:1E-1 et seq., and the Spill Compensation and Control Act, N.J.S.A. 58:10-23.11 et seq., for the matters covered herein. The terms and conditions of any such permit shall not be preempted by the terms and conditions of this Administrative Consent Order if the terms and conditions of any such permit are more stringent than the terms and conditions of this Administrative Consent Order. Should any of the measures to be taken by Shell and Motiva during the remediation of any ground water and surface water pollution result in a new or modified discharge as defined in the New Jersey Pollutant Discharge Elimination System ("NJPDES") regulations, N.J.A.C. 7:14A-1 et seq., then Shell and Motiva agree to obtain a NJPDES permit or permit modification from the Department prior to commencement of the activity.

59. All work plans, schedules, and other documents required by this Administrative Consent Order and approved in writing by the Department are incorporated herein and made a part hereof.

60. Upon the receipt of a written request from the Department, Shell and Motiva agree to submit to the Department all data and information, including technical records and contractual documents, concerning contamination at the Site, including raw sampling and monitoring data, whether or not such data and information, including technical records and contractual documents, were developed pursuant to this Administrative Consent Order. Shell and Motiva reserve their rights to assert a privilege regarding such documents, but agree not to assert any confidentiality or privilege claim with respect to any data related to site conditions, sampling or monitoring.

61. Shell and Motiva agree to comply with this Administrative Consent Order, which shall be fully enforceable as an Order in the New Jersey Superior Court pursuant to the Department's statutory authority.

62. No modification or waiver of this Administrative Consent Order shall be valid except by written amendment to this Administrative Consent Order duly executed by Shell and Motiva and the Department. Any amendment to this Administrative Consent Order shall be executed by the Department

and Shell and Motiva. The Department reserves the right to require the resolution of any outstanding violations of the rules of this Administrative Consent Order prior to executing any such amendment.

63. Shell and Motiva waive their rights to an administrative hearing concerning the entry of this Administrative Consent Order.

64. This Administrative Consent Order shall be governed and interpreted under the laws of the State of New Jersey.

65. If any provision of this Administrative Consent Order or the application thereof to any person or circumstance shall, to any extent, be invalid or unenforceable, the remainder of this Administrative Consent Order or the application of such provision to persons or circumstances other than those as to which it is held invalid or unenforceable, shall not be affected thereby and each provision of this Administrative Consent Order shall be valid and enforced to the fullest extent permitted by law.

66. This Administrative Consent Order represents the entire integrated agreement between the Department and Shell and Motiva concerning the Site subject to this Administrative Consent Order and supersedes all prior negotiations, representations or agreements, either written or oral, unless otherwise specifically provided herein.

67. Within thirty (30) calendar days after the effective date of this Administrative Consent Order, Shell and Motiva agree to record a copy of this Administrative Consent Order with the County Clerk, Bergen County, State of New Jersey and agree to provide the Department with written verification of compliance with this paragraph which shall include a copy of this Administrative Consent Order stamped "Filed" by the County Clerk.

68. This Administrative Consent Order shall be binding, jointly and severally, on each party, its successors, assignees and any trustee in bankruptcy or receiver appointed pursuant to a proceeding in law or equity. No change in the ownership or corporate status of any party or of the facility or site shall alter the party's responsibilities under this Administrative Consent Order.

69. Shell and Motiva agree to preserve, during the pendency of this Administrative Consent Order and for a minimum of five (5) years after its termination, all data and information, including technical records, potential evidentiary documentation and contractual documents, in its possession or in the possession of Shell's and Motiva's divisions, employees, agents, accountants, contractors, or attorneys that relate in any way to the contamination at the Site, despite any document retention policy to the contrary. After this five year period, Shell and Motiva may make a written request to the Department to discard any such documents. Such a request shall be accompanied by a description of the documents involved, including the name of each document, date, name and title of the sender and receiver and a statement of contents. Upon receipt of written approval by the Department, Shell and Motiva may discard only those documents that the Department does not require to be preserved for a longer period. Upon receipt of a written request by the Department, Shell and Motiva agree to submit to the Department all data and information, including technical records and contractual documents or copies of the same. Shell and Motiva reserve whatever rights it may have, if any, to assert any privilege regarding such data or information,

however, Shell and Motiva agree not to assert any privilege or confidentiality claims with respect to any data related to site conditions, sampling, or monitoring.

70. Shell and Motiva agree to provide to the Department written notice of the dissolution of its corporate or partnership identity, the liquidation of the majority of its assets or the closure, termination or transfer of operations in accordance with the schedule set forth at N.J.A.C. 7:26B-3.2 prior to such action. Upon such notice, Shell and Motiva agree to submit a cost review pursuant to this Administrative Consent Order to the Department. Shell and Motiva agree to also provide written notice to the Department of a filing of a petition for bankruptcy no later than the first business day after such filing. These requirements shall be in addition to any other statutory requirements arising from the dissolution of corporate or partnership identity, the liquidation of the majority of assets, or the closure, termination or transfer of operations. Upon receipt of notice of dissolution of corporate identity, liquidation of assets or filing of a petition for bankruptcy, the Department may request and, within fourteen (14) days of the Department's written request, Shell and Motiva agree to obtain and submit to the Department an additional remediation funding source pursuant to this Administrative Consent Order.

71. If Shell and Motiva implement a remedial action at the Site that includes institutional and/or engineering controls pursuant to N.J.A.C. 7:26E-8, this Administrative Consent Order shall remain in full force and effect including the requirements to maintain a remediation funding source, and to pay an annual 1% surcharge of the total amount of the remediation funding source. This Administrative Consent Order shall otherwise be terminated pursuant to paragraph 72 below.

72. If Shell and Motiva remediate contaminated soil at the Site to the Department's unrestricted use soil standard and any other contaminated media to the applicable remediation standard, the requirements of this Administrative Consent Order shall be deemed satisfied upon the receipt by Shell and Motiva of written notice from the Department stating that Shell and Motiva have completed the remediation required by this Administrative Consent Order in accordance with N.J.A.C. 7:26E and have satisfied all financial obligations imposed by this Administrative Consent Order and therefore Shell and Motiva do not need to continue to maintain a remediation funding source nor pay the annual 1% surcharge, and that no further action is necessary at the Site. The written notice shall also state that the Administrative Consent Order is thereby terminated. Such written notice shall not relieve Shell and Motiva from the obligation to conduct future investigation or remediation activities pursuant to Federal, State or local laws for matters not addressed by this Administrative Consent Order.

73. Shell and Motiva may assert a claim of confidentiality for any information submitted by Shell and Motiva pursuant to this Administrative Consent Order, by following the Department's procedures in N.J.A.C. 7:26B-7.

74. Shell and Motiva agree to submit to the Department, along with two original copies of the Administrative Consent Order, signed by Shell and Motiva, documentary evidence, such as a corporate resolution or a certification by a corporate officer, that the signatory has the authority to bind Shell and Motiva to the terms of this Administrative Consent Order, and proof that the remediation funding source has been established pursuant to N.J.A.C. 7:26C-7.

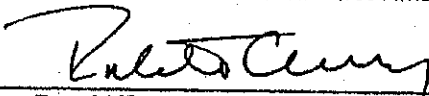


75. This Administrative Consent Order shall not be construed or interpreted as a waiver of the Department's rights, whether in law or equity, to pursue a claim against Shell and Motiva for natural resource damages relating to the Site including, but not limited to, the cost of restoration and replacement, where practicable, of any natural resource damaged or destroyed by a discharge of hazardous substances at the Site. In any subsequent judicial or administrative proceeding against Shell and Motiva for natural resource damages concerning the Site, Shell and Motiva shall not assert, and may not maintain, any defense or claim based upon the principles of waiver, res judicata, collateral estoppel, issue preclusion, claim-splitting, the entire controversy doctrine or other defenses based upon any contention that the natural resource damages claims the Department raises in any subsequent proceeding were or should have been brought in this case.

76. This Administrative Consent Order shall be effective upon the execution of this Administrative Consent Order by the Department and Shell and Motiva.

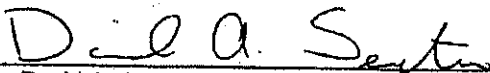
NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

Date: 1/9/07

BY:   
Ronald T. Corcoran, Assistant Director  
Oversight Resources Allocation Element

SHELL OIL COMPANY

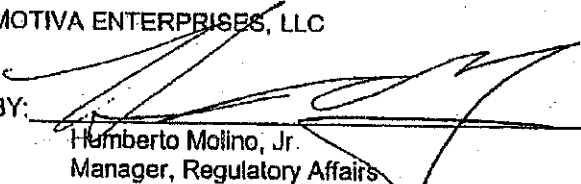
Date: 12/21/06

BY:   
David A. Sexton  
Shell Oil Company (by Shell Oil Products  
Company LLC, its authorized agent)

Title: President & Chief Executive Officer

MOTIVA ENTERPRISES, LLC

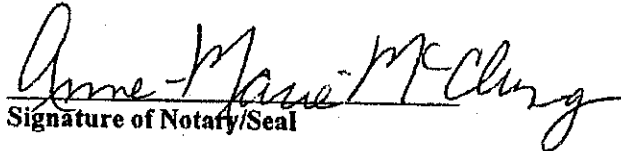
Date: 12/20/06

BY:   
Humberto Molino, Jr.  
Manager, Regulatory Affairs



**ACKNOWLEDGEMENT OF SIGNATURE**

I swear that on the 9<sup>th</sup> day of January, 2007 and in my presence,  
Ronald T. Corcory did affix his signature to this Administrative Consent Order.

  
Signature of Notary/Seal

Anna-Marie McClung  
Notary Public State of New Jersey  
My Commission Expires 10/31/08

**EXHIBIT 6**

**Excerpts of Testimony from Depositions of Donna Plummer  
taken March 13 and 14, 2013 and Irene Kropp taken June 6,  
2013**

**Complete copies of deposition transcripts are available upon the  
request of the Court**

Donna A. Plummer

Page 1

UNITED STATES DISTRICT COURT  
SOUTHERN DISTRICT OF NEW YORK

In Re: Methyl Tertiary	Master File
Butyl Ether ("MTBE")	No. 1:00-1898
Products Liability	MDL 1358
Litigation	(SAS): M21-88

This Document Relates To:

New Jersey Department of Environmental  
Protection, et al., v. Atlantic Richfield  
Co., et al.  
No. 08 Civ. 00312

- - -

Tuesday, March 13, 2012

- - -

Videotaped 30(b)(6) Deposition of  
DONNA A. PLUMMER held at New Jersey Department  
of Environmental Protection, 401 East State  
Street, Trenton, New Jersey, on the above  
date, beginning at 9:36 a.m., before Kimberly  
A. Overwise, a Certified Realtime Reporter and  
Notary Public.

- - -

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Donna A. Plummer

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1 A Yes.

2 Q So determining the sources of  
3 groundwater contamination is part of your  
4 professional duties as a case manager?

5 A Yes.

6 Q Okay. I'd like to move on and start  
7 talking about the Ridgewood site in a little  
8 more detail. So you were a case manager at  
9 Ridgewood starting in '88?

10 A It was one of the first cases  
11 assigned to me, yes.

12 Q Okay. So you were case manager from  
13 1988 until when?

14 A 2012.

15 Q Okay. I'm sorry. You were a case  
16 manager at Ridgewood from 1988 until 2012?

17 A Yes.

18 Q Were you the first --

19 A Oh, wait a second.

20 MR. KAUFMANN: Could I hear  
21 that question again?

22 THE WITNESS: No. I was a case  
23 manager for -- sorry. The site was  
24 transferred to the bureau of maintenance

Donna A. Plummer

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1           and management. I could have that  
2           flipped around. I don't know if it's  
3           maintenance and management or management  
4           and maintenance. It was transferred from  
5           Shell Ridgewood to that department, that  
6           bureau, in -- 2006?

7                       MR. KAUFMANN: I can't help  
8           you. You have to answer to the best of  
9           your knowledge.

10                      THE WITNESS: I'm trying --  
11           yeah, no, I know. I think it was around  
12           2006.

13   BY MR. SNOWDEN:

14           Q       2006? Okay. And so when the site  
15           was transferred to BOMM, you were no longer  
16           the case manager?

17           A       Correct.

18           Q       And you were the case manager up  
19           until that point?

20           A       Yes.

21           Q       Why was the site transferred to  
22           BOMM?

23           A       They were -- well, we had a lot of  
24           cases and Shell Ridgewood received their RAW

Donna A. Plummer

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1 approval from the DEP. Once they're in RAW  
2 approval, it's sort of a maintenance case  
3 where they've already established what they  
4 need to do. Okay?

5 Q Okay.

6 A So they're doing groundwater  
7 monitoring at the Shell Ridgewood, they're  
8 operating their pump and treat system, they're  
9 operating their soil venting extraction  
10 system. That's all sort of like maintenance.  
11 You know, you're just seeing the results;  
12 you're not telling them or advising them what  
13 to do.

14 Q Okay. So by that time Shell had  
15 completed the investigation?

16 A Correct.

17 Q Okay.

18 A Delineation, everything.

19 Q So they had fully delineated the  
20 contaminants at the Shell site?

21 A Yes.

22 Q By the time the site was transferred  
23 to BOMM?

24 A Yes.

Donna A. Plummer

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1 Q Okay.

2 A When they submitted their RAW,  
3 remedial action workplan, it was delineated.

4 Q By the time they submitted their  
5 RAW?

6 A Yes. And I don't know the date.  
7 I'd have to look at the files.

8 Q I imagine I probably have the  
9 document somewhere.

10 A I'm sure you do.

11 Q Do you recall when Shell received  
12 RAW approval?

13 A I'm going to say 2005, but I don't  
14 know. I'm guessing.

15 Q Okay. So by --

16 A I don't know.

17 Q That's okay. So by the time Shell  
18 obtained RAW approval, it had fully delineated  
19 the contaminants from the site?

20 A Yes.

21 Q And had established hydraulic  
22 control over the site?

23 A Yes.

24 Q Did it establish hydraulic control



Donna A. Plummer

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1 contaminants at the site?

2 A Well, yeah. But usually your  
3 investigation puts in a lot of wells to figure  
4 out the overall characteristics of a plume.  
5 So it depends on how many wells and if you  
6 have enough. Sometimes your plume can be very  
7 narrow and you'd have to be really, really  
8 close in your monitoring well system.

9 Q Did Shell put in a lot of wells?

10 A Yes, they did.

11 Q Did they put in enough wells?

12 A Yes, they did. They were -- by the  
13 time we got to 2006, they were pretty much on  
14 target.

15 Q Okay.

16 A They were -- every time I would make  
17 a suggestion, they were out there doing it.

18 Q Okay. So as of around 2006 Shell  
19 was very responsive to DEP's requests?

20 A Yeah, they were.

21 Q Okay. And they were doing what they  
22 needed to do to --

23 A Remediate the site.

24 Q -- remediate the site?

1 the Shell site?

2 A No. I can guess, but I don't think  
3 you want that.

4 Q No, no. What does it mean to say  
5 that hydraulic control has been established at  
6 a site?

7 A It has to do with the contamination  
8 at the site and if the pump and treat system  
9 is actually drawing it all in opposed to  
10 letting most of it go or a little of it go.  
11 So that's basically what it's telling us.

12 Q Okay. So if hydraulic control is  
13 established, that means that contamination is  
14 not leaving the site?

15 A Correct.

16 Q Is hydraulic control a necessary  
17 step in remediating a site?

18 A Absolutely.

19 Q Does it have to be -- at what point  
20 in the regulatory process does that have to  
21 happen? Do you have to establish hydraulic  
22 control before you get approval for your RAW?

23 A Okay. Hydraulic control is  
24 basically dealing with your design of your

Donna A. Plummer

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1 remediation system. So if your remediation  
2 system is not addressing contamination; i.e.,  
3 you haven't achieved hydraulic control. They  
4 sort of go hand in hand. So if your  
5 monitoring well scenario is showing decreasing  
6 trends, then capture has been achieved.

7 Q Okay. So when you say monitoring  
8 wells show decreasing trends, does that -- are  
9 you saying that -- let me back up.

10 How do you typically assess whether  
11 hydraulic control's been achieved at a site?  
12 Do you look at the monitoring well results?

13 A You look at everything. Okay? You  
14 look at your -- if there's a new discharge,  
15 you look at your receptors, you look at your  
16 groundwater flow direction, you look at your  
17 monitoring and sampling results, you look at  
18 your depth to water, you look at all this  
19 information.

20 Q What's the significance of your  
21 sampling results in determining whether  
22 hydraulic control is achieved?

23 A It's one of the parameters that you  
24 look at to make a determination whether

Donna A. Plummer

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1 with that conclusion?

2 A I can't remember that part.

3 Q Okay.

4 A I do remember the report, but I do  
5 remember Mr. Mowell of the Village of  
6 Ridgewood stating that they didn't have these  
7 issues until the MTBE and these other  
8 volatiles were detected in that well.

9 Q Okay. What other volatiles are you  
10 referring to?

11 A I don't recall the sampling of the  
12 Twinney well, but I'm assuming there were  
13 other volatiles like benzene or xylenes or  
14 BTEX.

15 Q Okay. Do you recall that there were  
16 fuel oil constituents that were also detected?

17 A I can't recall.

18 Q Has Shell delineated all MTBE  
19 contamination at the Ridgewood site?

20 A I'm assuming they have.

21 Q Why are you assuming they have?

22 A Because they state it here in this  
23 report and they're asking for a reduction in  
24 sampling. So I'm assuming they have.

Donna A. Plummer

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1 Q Okay. And they would have  
2 delineated to the groundwater quality standard  
3 for MTBE?

4 A Yeah. Because when I issued the RAW  
5 approval, they had established that.

6 Q But you don't recall when Shell  
7 first delineated at the site?

8 A First delineated?

9 Q Yes.

10 A As soon as they put a well in, they  
11 were starting to delineate at the site.

12 Q When they first -- when they  
13 completed delineation at the site?

14 A When was my RAW approval issued?  
15 The department's, sorry, not mine.

16 MR. KAUFMANN: And you  
17 understand, just for the record, when she  
18 says she doesn't recall things, that the  
19 site file is available for review --

20 MR. SNOWDEN: Yes.

21 MR. KAUFMANN: -- in order to  
22 come --

23 MR. SNOWDEN: No, I am not  
24 assuming that DEP doesn't recall. I

Donna A. Plummer

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UNITED STATES DISTRICT COURT  
SOUTHERN DISTRICT OF NEW YORK

In Re: Methyl Tertiary	Master File
Butyl Ether ("MTBE")	No. 1:00-1898
Products Liability	MDL 1358
Litigation	(SAS): M21-88

This Document Relates To:

New Jersey Department of Environmental  
Protection, et al., v. Atlantic Richfield  
Co., et al.  
No. 08 Civ. 00312

- - -

Wednesday, March 14, 2012

VOLUME II

- - -

Continued videotaped 30(b)(6)  
Deposition of DONNA A. PLUMMER held at New  
Jersey Department of Environmental Protection,  
401 East State Street, Trenton, New Jersey, on  
the above date, beginning at 9:22 a.m., before  
Kimberly A. Otherwise, a Certified Realtime  
Reporter and Notary Public.

- - -

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Donna A. Plummer

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1 Twinney well?

2 A No.

3 Q Has DEP ever directed Ferguson to  
4 provide treatment for the Twinney well?

5 A No.

6 Q Has DEP ever directed any party  
7 other than Shell to provide treatment for the  
8 Twinney well?

9 A Can you repeat that again?

10 Q Sure. Has DEP ever directed any  
11 party other than Shell to provide treatment  
12 for the Twinney well?

13 A Not that I'm aware of.

14 Q How about for the Walthery well?

15 A Not that I'm aware of.

16 Q How about for the Paramus well?

17 A Not that I'm aware of.

18 Q Ms. Plummer, you testified yesterday  
19 that your goal as a case manager was to  
20 protect municipal wells and clean up  
21 contaminated sites as quickly as possible; is  
22 that right?

23 A Yes. That's overall.

24 Q I'm sorry. That's what?



Irene S. Kropp

Page 1

UNITED STATES DISTRICT COURT  
SOUTHERN DISTRICT OF NEW YORK

In Re: Methyl Tertiary	Master File
Butyl Ether ("MTBE")	No. 1:00-1898
Products Liability	MDL 1358
Litigation	(SAS): M21-88

This Document Relates To:

New Jersey Department of Environmental  
Protection, et al., v. Atlantic Richfield  
Co., et al.  
No. 08 Civ. 00312

- - -

Thursday, June 6, 2013

- - -

Videotaped Deposition of IRENE S.  
KROPP held at New Jersey Department of  
Environmental Protection, 401 E. State Street,  
Trenton, New Jersey, on the above date,  
beginning at 9:39 a.m., before Kimberly A.  
Overwise, a Certified Realtime Reporter and  
Notary Public.

- - -

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Irene S. Kropp

Page 224

1 generally to prefer actual restoration of a  
2 site to cash payments?

3 MR. AXLINE: Objection; vague,  
4 calls for speculation.

5 THE WITNESS: I'm waiting for  
6 the "but you can answer."

7 MR. AXLINE: You can answer if  
8 you can answer without speculating.

9 THE WITNESS: I think primarily  
10 the money that ONRR, whatever you call  
11 it, received through natural resource  
12 damage claims was spent on projects and  
13 acquisitions. I'm not aware of when  
14 we've gone back in and said to somebody  
15 we're taking your NRD contribution and  
16 moving your site from cleanup standards  
17 to predischage, if that's your question.

18 BY MR. CONDRON:

19 Q Yes, it is actually. Okay.

20 I believe Mr. Stack asked you  
21 earlier if you had reviewed Dr. Boyle's expert  
22 report in this case and you had said no; is  
23 that fair?

24 A That's fair because I don't remember

**EXHIBIT 7**

**Excerpts of Expert Report of Anthony Brown**

**A complete copy of the Brown Report is available upon the  
request of the Court**

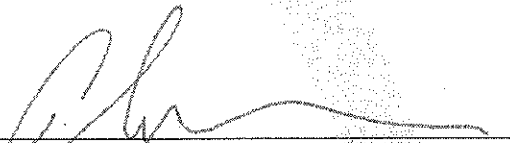


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## REVISED EXPERT REPORT OF ANTHONY BROWN

Master File No. 1:00-1898, MDL No. 1358 (SAS), M21-88, No. 08 Civ. 00312  
New Jersey MTBE Litigation

  
Signature

JAN 9, 2013  
Date

Prepared on behalf of:

New Jersey Department of Environmental Protection (NJDEP)  
The Commissioner of the NJDEP  
The Administrator of the New Jersey Spill Compensation Fund

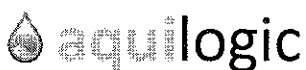
For:

The Office of the Attorney General of New Jersey  
and

Miller, Axline & Sawyer  
The Law Office of John K. Dema  
Berger & Montague  
Cohn Lifland Pearlman Herrmann & Knopf

Project No.: 003-01

January 2013



considered an opinion. Unless stated differently in the report, all of the opinions expressed herein I hold as more likely than not.

## 1.7 Feasibility Study

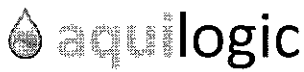
Upon completion of the site summary reports and memoranda (Appendix B), a feasibility study (Appendix C) was prepared to evaluate remediation approaches and treatment technologies for each of the trial sites. While a single feasibility study was prepared, it does address each trial site and considers site-specific conditions at the trial sites.

## 1.8 Cost Estimates

A standardized costing model was developed using defined remediation "elements" (e.g. bedrock monitoring well). Based upon the review, analysis and interpretation presented in a summary report, and the evaluation in the feasibility study, a remedial approach was developed for each plaintiffs' trial site (Appendix D). The costing model was then used as a "menu" to estimate the cost to implement the proposed remedial approach.

No remedial action is proposed for any of the defendant trial sites; however, investigation is proposed at one defendant trial site (##14510 NJDOC Bayside State Prison). Some level of additional investigation is proposed for each of the plaintiffs' trial sites. Based upon currently available data, the following remediation approaches are proposed:

- Monitoring only is recommended for two plaintiffs' trial sites (ID#11346, Shell Service Station #138490, Ridgewood; and ID#4476, Valero/APCO Service Station, Manalapan). The need for remediation would be reevaluated at these sites as additional data are generated from the proposed site investigations.
- In-situ enhanced biodegradation using oxygen reducing compound (ORC®) is recommended for one plaintiffs' trial site (ID#9224, Sunoco Service Station #0006-9021, Bloomfield).
- Pump and treat (P&T) with dual phase extraction (DPE) is recommended for one plaintiffs' trial site (ID#15442, 5 Points BP Service Station, Sewell).
- P&T and soil vapor extraction (SVE) is recommended for one plaintiffs' trial site (ID#10792, Maple Shade Citgo Service Station, Maple Shade).
- P&T only is recommended for the following five plaintiffs' trial sites:
  1. ID#2156, Skyline Service Center, Ringwood
  2. ID#11126, Bakers Waldwick Gulf Service Station #121359, Waldwick



Expert Report of Anthony Brown  
January 2013

3. ID#8857, Exxon Service Station #31310, Livingston
4. ID#41958, HP Delta Service Station, Woodbridge
5. ID#6187, Getty Service Station #56202, West Windsor

The cost estimates to implement the proposed remedies are provided in Appendix D and summarized in Table 4.

## **1.9 Additional Site Investigation**

In October 2012, limited additional site investigations were performed on behalf of the plaintiffs at the following three plaintiffs' trial sites:

1. ID#9224, Sunoco Service Station #0006-9021, Bloomfield
2. ID#4476, Valero/APCO Service Station, Manalapan
3. ID#10792, Maple Shade Citgo Service Station, Maple Shade

The results from these investigations are provided in Appendix F. While not incorporated within the summary reports for these sites, the results were considered when developing opinions for each of the sites.



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# REBUTTAL REPORT OF ANTHONY BROWN

## To Site Specific Expert Report of Virginia King

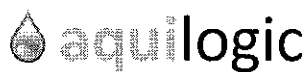
Prepared on behalf of:  
New Jersey Department of Environmental Protection (NJDEP)  
The Commissioner of the NJDEP  
The Administrator of the New Jersey Spill Compensation Fund

For:  
The Office of the Attorney General of New Jersey  
and  
Miller, Axline & Sawyer  
The Law Office of John K. Dema  
Berger & Montague  
Cohn Lifland Pearlman Herrmann & Knopf

Project No.: 003-04

March 2013





Rebuttal Report of Anthony Brown  
To Expert Report of Virginia King  
March 2013

- I. Scope and Purpose
- II. Qualifications
- III. Information Considered
- IV. Summary of Opinions
- V. Basis of Opinions

**Opinion 1:**

Lack of Uniformity

Inconsistent Calculation of Damages

No Connection of Injury of Damages

**Opinion**

*"...as demonstrated by Thomas Gillespie, many contaminants with varying degrees of toxicity have been detected in groundwater underlying the Ridgewood site" (King, 2013: pg. 6).*

**Rebuttal**

It is recognized that the groundwater may be contaminated with other chemicals (e.g. PCE). However, this does not negate the defendants' responsibility to address the contamination they released. The NJDEP is requiring that the defendants address their contamination and restore groundwater to its condition prior to the discharge of MTBE and/or TBA. Based upon site-specific conditions, the NJDEP may elect to pursue other parties that caused the contamination by other chemicals (e.g. dry cleaners).

The NJDEP is requiring that the groundwater contamination be restored to its pre-discharge condition according to the New Jersey Spill Act (N.J.S.A. 58:10-23.11 et seq.), and to maintain the quality of the State's groundwater according to New Jersey Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq).

Internal Inconsistencies

**Opinion 2:**

Kevin Boyle's damage assessment is wholly unnecessary and unreliably calculated.

Robert Unsworth's NRD calculations are based on faulty assumptions and are inappropriately calculated.

**Opinion**

*"...Mr. Unsworth ignores the presence of hazardous substances other than MTBE, even where, such as at Ridgewood, non-MTBE hazardous substances are present at concentrations that exceed the applicable NJ GWQS" (King, 2013: pg. 11).*



Rebuttal Report of Anthony Brown  
To Expert Report of Virginia King  
March 2013

### **Rebuttal**

It is recognized that the groundwater may be contaminated with other chemicals (e.g. PCE). However, this does not negate the defendants' responsibility to address the contamination they released. The NJDEP is requiring that the defendants address their contamination and restore groundwater to its condition prior to the discharge of MTBE and/or TBA. Based upon site-specific conditions, the NJDEP may elect to pursue other parties that caused the contamination by other chemicals (e.g. dry cleaners).

The NJDEP is requiring that the groundwater contamination be restored to its pre-discharge condition according to the New Jersey Spill Act (N.J.S.A. 58:10-23.11 et seq.), and to maintain the quality of the State's groundwater according to New Jersey Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq).

### **Opinion 3:**

No response.



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# REBUTTAL REPORT OF ANTHONY BROWN

To Expert Report of William H. Desvousges, Ph.D.

Prepared on behalf of:

New Jersey Department of Environmental Protection (NJDEP)

The Commissioner of the NJDEP

The Administrator of the New Jersey Spill Compensation Fund

For:

The Office of the Attorney General of New Jersey

and

Miller, Axline & Sawyer

The Law Office of John K. Dema

Berger & Montague

Cohn Lifland Pearlman Herrmann & Knopf

Project No.: 003-04

March 2013



Rebuttal Report of Anthony Brown  
To Expert Report of William H. Desvousges  
March 2013

## 1. SITE-SPECIFIC DAMAGE ASSESSMENTS

### 1.1. Livingston Trial Site

#### Statement

*"The only contaminants detected above GWQS in PWS 11 are VOCs, primarily TCE and PCE" (Desvousges, 2013: pg. 80).*

#### Rebuttal to Statement

MTBE has been detected at maximum of 28.7 (November 19, 2009) in PWS#11 (Aquilologic, 2013: B5, Table 1). However, since no pre-treatment (influent) groundwater samples have been analyzed since 2004. The concentration in the influent groundwater must have been higher than that of the effluent samples indicating that a significant source of MTBE impacted groundwater.

It is recognized that the groundwater may be contaminated with other chemicals (e.g. TCE and PCE). However, this does not negate the defendants' responsibility to address the contamination they released. The NJDEP is requiring that the defendants address their contamination and restore groundwater to its condition prior to impact by MTBE and/or TBA. Based upon site-specific conditions, the NJDEP may elect to pursue other parties that caused the contamination by other chemicals (e.g. dry cleaners).

The NJDEP is requiring that the groundwater contamination be restored to its pre-discharge condition according to the New Jersey Spill Act (N.J.S.A. 58:10-23.11 et seq.), and to maintain the quality of the State's groundwater according to New Jersey Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq).

### 1.2. Deptford Trial Site

#### 1.2.1. Assessment of Potential Service Losses

##### 1.2.1.1. Potential Receptors

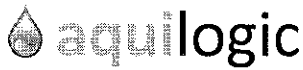
#### Statement

*"The Deptford 2007 Master Plan indicates that the use of domestic wells in Deptford Township is 'limited and declining' because the Deptford Municipal utilities Authority extends water mains to reach undeveloped portions of the township (Slaugh 2007). Moreover, potable wells are not used in the area due to taste, odor, and staining issues related to the high iron content in the groundwater..." (Desvousges, 2013: pg. 90).*

#### Rebuttal to Statement

According to 5 Points BP Site documents, Deptford Township was in the process of installing municipal supply test wells at the property adjacent to the Tortorice property when they learned of the adjacent

Privileged and Confidential



Rebuttal Report of Anthony Brown  
To Expert Report of William H. Desvousges  
March 2013

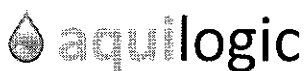
contamination (NJDEP-SITE595-007092). Two wells were installed, Site B and Site E. The Site E well was located "500 feet from the site [ARFA], and next to a well that has already been impacted [T-1]" (NJDEP-SITE595-007093). The Site E well was installed from "125 to 200 feet deep" (NJDEP-SITE595-007093). Upon learning of the adjacent contamination, "Deptford Township was disturbed by this information and requested copies of the file" (NJDEP-SITE595-007093). In the January 2000 Remedial Progress Report, Kluk consultants provides captioned photographs of the Site E well. One caption reads "The well is screened to test Mount Laurel; Wenonah, Marshalltown and Englishtown at depths between 100 and 250 feet. Scheduled testing was canceled (sic). The location is about 400 feet west of contamination in the Tortorice (Englishtown Formation) well (March 99)" (NJDEP-SITE595-005975). Thus, although no drinking water well other than T-1 has been impacted from releases at the facility, the releases from the facility prevented the utilization of municipal supply test wells that could have added additional groundwater supply to the public drinking water system. No further information regarding these wells was available.

It is recognized that the groundwater at the 5 Points BP Deptford Site contains high iron content which may impact the odor and taste of the drinking water. However, this does not negate the defendants' responsibility to address the contamination they released. The NJDEP is requiring that the defendants address their contamination and restore groundwater to its condition prior to the discharge of MTBE and/or TBA. If the background groundwater condition includes, for example, high iron content, then the defendants are not required to improve the natural quality of the water. Based upon site-specific needs, even groundwater of naturally poor quality (e.g. high TDS) may still be used for local, domestic supply. In addition, the shallow groundwater does move – laterally and vertically; and thus, recharges deeper groundwater that is of better general quality and use for public supply.

The NJDEP is requiring that the groundwater contamination be restored to its pre-discharge condition according to the New Jersey Spill Act (N.J.S.A. 58:10-23.11 et seq.), and to maintain the quality of the State's groundwater according to New Jersey Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq).

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### 1.3. Manalapan Trial Site

#### 1.3.1. Assessment of Potential Service Losses

##### 1.3.1.1. Potential Receptors

##### 1.3.1.2. Public Water Supply

#### Opinion

*"...the groundwater zones that have been affected at the Manalapan Trial Site are not practical sources of water supply because they are low yielding. Its low yield was evidenced by the failure to get adequate volumes of water when conducting sample punches in 2012..."* (Desvousges, 2013: pg. 96).

#### Rebuttal to Opinion

Soils below the Valero Site and to the southeast are generally described as fine-to medium grained sands and silts (Aquilologic, 2013: B7, Figure 5). Mr. Brown and Mr. Maguire (Maguire, 2013: pg. 10) conclude that this site is directly underlain by the Mount Laurel Formation. This formation constitutes an aquifer used widely as a source of water supply. Releases at the Valero Manalapan Site have contaminated groundwater in the Mount Laurel Formation. Numerous domestic and non-community WSWs are completed in the Mount Laurel Formation in the vicinity of the Valero Manalapan Site. While pumping rates at these nearby WSWs are not known, there is no evidence that groundwater yields at these wells are low. Given the number of WSWs in this formation, and based on regional hydrogeology and groundwater production data, it appears that groundwater yields are of acceptable volume.

The basis of the statement indicating low yield during the 2012 sampling is unknown. Sampling conducted in October 2012 did not encounter any problems collecting groundwater (Aquilologic, 2013: F2). There is no history of low groundwater yields in the sampling history of the monitoring wells at the Valero Site (Aquilologic, 2013: B7, Table 2).

Regardless of the groundwater yield, the defendant has an obligation to restore groundwater to its pre-discharge condition and is supported by the regulations, which define injury as *"any adverse change or impact of a discharge on a natural resource or impairment of a natural resource service, whether direct or indirect, long term or short term, and includes the partial or complete destruction or loss of the natural resource"*. Therefore, the plaintiffs are entitled to have the groundwater restored to its pre-discharge, non-injured state.

Further, under the New Jersey Spill Act (N.J.S.A. 58:10-23.11 et seq.), plaintiffs have the right to recover (amongst other things) *"cleanup and removal costs, damages (including primary and compensatory restoration damages and the costs of any natural resource damage assessments) and injunctive relief, for injury to, destruction of, or loss of natural resources."*

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March 2013

In addition, the policy to maintain the quality of the State's groundwater is also supported by the legislature's declaration in the New Jersey Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq), which states, *"It is the policy of this State to restore, enhance and maintain the chemical, physical, and biological integrity of its waters, to protect public health, to safeguard fish and aquatic life and scenic and ecological values, and to enhance the domestic, municipal, recreational, industrial and other uses of water."*

### **1.3.2. Service Loss Conclusions**

## **1.4. West Windsor Trial Site**

### **1.4.1. Assessment of Potential Service Losses**

#### **1.4.1.1. Potential Receptors**

#### **1.4.1.2. Public Water Supply**

### **Opinion**

*"Groundwater at the West Windsor Trial Site would not be a viable source of water supply because it is low yielding and the baseline water quality levels are poor...The overlying bedrock and deposits are of low hydraulic conductivity and not a practical source of domestic water supply...In addition, there are high background levels of zinc and arsenic in the groundwater. In fact, in October 2011, the groundwater extraction system at the site was shut down due to the presence of zinc and arsenic in the treatment system discharge...Likewise, zinc, above permit discharge limits, has been reported in the groundwater recovery system influent, which has prevented the startup of the groundwater extraction system..."* (Desvousges, 2013: pg. 98).

### **Rebuttal**

The depth and hydrogeologic character of "competent" bedrock has not been established beneath the West Windsor Getty Site. Only one monitoring well (MW-6) encountered competent bedrock (from approximately 46 to 61 feet bgs). MTBE was detected in this well at concentrations up to 1,010,000ug/L (March 1, 2005). The recently installed deep monitoring well (MW-21D), completed to 50 feet bgs, did not encounter competent bedrock (GPMI\_NJ\_02488 – GPMI\_NJ\_02489).

There has only been one pumping test performed on-site to assess the hydraulic conductivity in the shallow sediments (including unconsolidated sediments and weathered bedrock). Additional assessment is needed to determine the groundwater yield in the shallow sediments, as well as to hydrogeologic character of the underlying bedrock.

Getty made no attempt to determine the background concentrations of dissolved metals in groundwater before the treatment system began operation. The origin of the elevated zinc and arsenic concentrations in the treatment system discharge is unknown. No regional data, or data from

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monitoring wells in the vicinity of the West Windsor Getty Site, has been presented to characterize background zinc and arsenic concentrations in local groundwater.

The full vertical and lateral extent of groundwater contamination at the West Windsor Getty Site is unknown, particularly in the bedrock. Therefore, it is premature to conclude that groundwater contamination is restricted to unconsolidated sediments and that deeper groundwater zones are not contaminated, until further investigation is conducted. There have been no additional pumping tests or groundwater modeling of the unconsolidated sediments to conclude that groundwater yields are limited. Insufficient data has been presented to characterize the background dissolved metal concentrations in local groundwater prior to the treatment system becoming operational. Therefore, the source of the elevated zinc and arsenic concentrations is unknown.

Little is known about the WSWs in the vicinity of the Getty Site, such as completion depth, screen interval(s), or pumping rates. In addition, the hydrogeologic and contaminant conditions in the bedrock have yet to be characterized.

Regardless of Dr. Desvousges' opinion that the groundwater beneath the West Windsor Getty Site is not a meaningful source of water supply, the defendant has an obligation to restore groundwater to its pre-discharge condition and is supported by the regulations, which define injury as *"any adverse change or impact of a discharge on a natural resource or impairment of a natural resource service, whether direct or indirect, long term or short term, and includes the partial or complete destruction or loss of the natural resource"*. Therefore, the plaintiffs are entitled to have the groundwater restored to its pre-discharge, non-injured state.

Further, under the New Jersey Spill Act (N.J.S.A. 58:10-23.11 et seq.), plaintiffs have the right to recover (amongst other things) *"cleanup and removal costs, damages (including primary and compensatory restoration damages and the costs of any natural resource damage assessments) and injunctive relief, for injury to, destruction of, or loss of natural resources."*

In addition, the policy to maintain the quality of the State's groundwater is also supported by the legislature's declaration in the New Jersey Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq), which states, *"It is the policy of this State to restore, enhance and maintain the chemical, physical, and biological integrity of its waters, to protect public health, to safeguard fish and aquatic life and scenic and ecological values, and to enhance the domestic, municipal, recreational, industrial and other uses of water."*

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March 2013

#### **1.4.2. Service Loss Conclusions**

### **1.5. Waldwick Trial Site**

#### **1.5.1. Assessment of Potential Service Losses**

1.5.1.1. Potential Receptors

1.5.1.2. Public Water Supply

##### **Statement**

*"PCE contamination makes groundwater near the site not potable at baseline. The two Waldwick municipal supply wells closest to the site (8 and 9) have PCE levels well above GWQS and are not producing..."* (Desvousges, 2013: pg. 101).

##### **Rebuttal to Statement**

It is recognized that the groundwater may be contaminated with other chemicals (e.g. PCE). However, this does not negate the defendants' responsibility to address the contamination they released. The NJDEP is requiring that the defendants address their contamination and restore groundwater to its condition prior to the discharge of MTBE and/or TBA. Based upon site-specific conditions, the NJDEP may elect to pursue other parties that caused the contamination by other chemicals.

The NJDEP is requiring that the groundwater contamination be restored to its pre-discharge condition according to the New Jersey Spill Act (N.J.S.A. 58:10-23.11 et seq.), and to maintain the quality of the State's groundwater according to New Jersey Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq).

#### **1.5.2. Service Loss Conclusions**

### **1.6. Ridgewood Trial Site**

#### **1.6.1. Assessment of Potential Service Losses**

1.6.1.1. Potential Receptors

1.6.1.2. Public Water Supply

##### **Statement**

*"The Ridgewood Water Department has been affected by PCE and TCE contamination. According to the 1990 Safe Water Drinking Act Impact Analysis for the Village of Ridgewood, 15 wells consistently had levels above the USEPA's MCLs for PCE"* (Desvousges, 2013: pg. 104).

##### **Rebuttal to Statement**

It is recognized that the groundwater may be contaminated with other chemicals (e.g. PCE). However, this does not negate the defendants' responsibility to address the contamination they released. The NJDEP is requiring that the defendants address their contamination and restore groundwater to its

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Rebuttal Report of Anthony Brown  
To Expert Report of William H. Desvousges  
March 2013

condition prior to the discharge of MTBE and/or TBA. Based upon site-specific conditions, the NJDEP may elect to pursue other parties that caused the contamination by other chemicals.

The NJDEP is requiring that the groundwater contamination be restored to its pre-discharge condition according to the New Jersey Spill Act (N.J.S.A. 58:10-23.11 et seq.), and to maintain the quality of the State's groundwater according to New Jersey Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq).

**1.6.2. Service Loss Conclusions**

**1.7. Bloomfield Trial Site**

**1.7.1. Assessment of Potential Service Losses**

1.7.1.1. Potential Receptors

1.7.1.2. Public Water Supply

**1.7.2. Service Loss Conclusions**

**1.8. References**

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**EXHIBIT 8**

**Excerpts of Reports served by Plaintiffs' expert Anthony Brown**

**Complete copies of the Brown Reports are available upon the  
request of the Court**



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# REVISED COST SUMMARY

## ID # - 11346 SHELL SERVICE STATION #138490

### Ridgewood Village, Bergen County, New Jersey

Prepared on behalf of:

New Jersey Department of Environmental Protection (NJDEP)  
The Commissioner of the NJDEP  
The Administrator of the New Jersey Spill Compensation Fund

For:

The Office of the Attorney General of New Jersey  
and

Miller, Axline & Sawyer  
The Law Office of John K. Dema  
Berger & Montague  
Cohn Lifland Pearlman Herrmann & Knopf

Project No.: 003-01

January 2013

## Estimated Costs Summary

Site Name: #11346 Shell Service Station

Description: Investigation

### Design Basis

1 Chemicals of Concern:		Analysis	Treatment
MTBE		1	N/A
TBA		1	N/A
BTEX		1	N/A
2 Estimated Average Influent Concentrations (µg/L)			Section
MTBE		0	N/A
TBA		0	N/A
BTEX		0	N/A
Total Number of wells		18	B1
3	Monitoring Wells	18	B1
4	Extraction Wells	0	B1
Treatment System			
5	Total Flow Rate	0	GPM D
6	Trenching	0	Foot B1
7	Treatment Process(es)	N/A	B2
8	Treatment Building	N/A	C27
Net Present Value			
9	Existing Site Wells	0	
10	Number of wells for Semi-annual Sampling	18	B1 and existing site wells
11	Years of O&M/Semi-annual Sampling/Land Lease	0	2 pore flush, D
12	Years of Post Remediation Monitoring	5	
13	Discount Rate	3.0%	assumed
14	Contingency	30%	C51
Other			
15	Tax Rate	7%	
16	Mark Up	10%	
17	Location Adjustment Factor		
	Newark	112.7%	RS MEANS RJ1040-010 070-071
	Elizabeth	111.8%	RS MEANS RJ1040-010 072
	Jersey City	110.9%	RS MEANS RJ1040-010 073
	Paterson	112.2%	RS MEANS RJ1040-010 074-075
	Hackensack	111.0%	RS MEANS RJ1040-010 076
	Long Branch	110.2%	RS MEANS RJ1040-010 077
	Dover	111.2%	RS MEANS RJ1040-010 078
	Summit	111.2%	RS MEANS RJ1040-010 079
	Vineland	108.8%	RS MEANS RJ1040-010 080,083
	Camden	110.4%	RS MEANS RJ1040-010 081
	Atlantic City	109.1%	RS MEANS RJ1040-010 082,084
	Trenton	109.8%	RS MEANS RJ1040-010 085-086
	Point Pleasant	110.2%	RS MEANS RJ1040-010 087
	New Brunswick	111.2%	RS MEANS RJ1040-010 088-089
	Calculated State Average	110.8%	

## Estimated Costs Summary

Site Name: #11346 Shell Service Station

Description: Investigation

Item		Quantity		Rate	Total	Task Detail
<b>Groundwater Well Installation</b>						
1	Well Installation Work Plan	1	\$	5,485	\$ 5,485	C1
2	Incremental Work Plan Cost for wells > 4	14	\$	500	\$ 7,000	
3a	Pre-Drilling Activities (1-6 Wells/day)	3	\$	7,956	\$ 23,868	C2a
3b	Fracture Lineament Assessment	1	\$	11,358	\$ 11,358	C2b
4	Driller Mobilization	1	\$	23,658	\$ 23,658	C2a
	<b>Total Number of wells</b>	<b>18</b>				
<b>Monitoring Wells</b>						
	<b>Monitoring Wells</b>	<b>18</b>				
5	A1-Zone Groundwater Well Installation/Development (TD = 20')	0	\$	12,923	\$ -	C3
6	A2 Zone Groundwater Well Installation/Development (TD = 40')	0	\$	15,048	\$ -	C4
7	A3 Zone Groundwater Well Installation/Development (TD = 60')	0	\$	18,159	\$ -	C5
8	A4 Zone Groundwater Well Installation/Development (TD = 80')	0	\$	20,550	\$ -	C6
9	B1-Zone Groundwater Well Installation/Development (TD = 40')	6	\$	24,820	\$ 148,921	C7
10	B2-Zone Groundwater Well Installation/Development (TD = 85')	6	\$	31,428	\$ 188,569	C8
11	B3-Zone Groundwater Well Installation/Development (TD = 100')	0	\$	37,927	\$ -	C9
12	B4-Zone Groundwater Well Installation/Development (TD = 125')	6	\$	40,849	\$ 245,096	C10
13	B5-Zone Groundwater Well Installation/Development (TD = 150')	0	\$	41,672	\$ -	C11
14	B6-Zone Groundwater Well Installation/Development (TD = 200')	0	\$	46,983	\$ -	C12
	<b>Extraction Wells</b>	<b>0</b>				
5	A1-Zone Groundwater Well Installation/Development (TD = 20')	0	\$	12,923	\$ -	C3
6	A2 Zone Groundwater Well Installation/Development (TD = 40')	0	\$	15,048	\$ -	C4
7	A3 Zone Groundwater Well Installation/Development (TD = 60')	0	\$	18,159	\$ -	C5
8	A4 Zone Groundwater Well Installation/Development (TD = 80')	0	\$	20,550	\$ -	C6
9	B1-Zone Groundwater Well Installation/Development (TD = 40')	0	\$	24,820	\$ -	C7
10	B2-Zone Groundwater Well Installation/Development (TD = 85')	0	\$	31,428	\$ -	C8
11	B3-Zone Groundwater Well Installation/Development (TD = 100')	0	\$	37,927	\$ -	C9
12	B4-Zone Groundwater Well Installation/Development (TD = 125')	0	\$	40,849	\$ -	C10
13	B5-Zone Groundwater Well Installation/Development (TD = 150')	0	\$	41,672	\$ -	C11
14	B6-Zone Groundwater Well Installation/Development (TD = 200')	0	\$	46,983	\$ -	C12
15	Well Installation Report	1	\$	7,520	\$ 7,520	C13
16	Incremental Report Cost for wells >4	14	\$	1,000	\$ 14,000	
	<b>Groundwater Well Installation Subtotal</b>				<b>\$ 675,474</b>	
<b>Pilot Testing</b>						
17	Pumping Test Work Plan	0	\$	5,125	\$ -	C14
18	Aquifer Pumping Test	0	\$	39,617	\$ -	C15a
19	Dual Phase Extraction Pilot Test	0	\$	28,472	\$ -	C15b
20	Bench Scale Testing	0	\$	10,593	\$ -	C16
21	Aquifer Pumping and Bench Test Report	0	\$	7,520	\$ -	C17
	<b>Pilot Testing Subtotal</b>				<b>\$ -</b>	
<b>Groundwater Modeling</b>						
22	2-Dimension Model	0	\$	20,020	\$ -	C39
23	3-Dimension Model	0	\$	39,500	\$ -	C40
	<b>Groundwater Modeling Subtotal</b>				<b>\$ -</b>	
<b>Risk Assessment</b>						
24	Ecological Risk Assessment	0	\$	11,770	\$ -	C41
25	Vapor Intrusion Risk Assessment	0	\$	8,828	\$ -	C42
	<b>Risk Assessment Subtotal</b>				<b>\$ -</b>	
<b>Professional/Technical Services</b>						
26	FS/RAP/Remedial Design	15%	\$	-	\$ -	C51
27	Construction Management	10%	\$	-	\$ -	C51
28	Project Management	8%	\$	-	\$ -	C51
	<b>Professional/Technical Services Subtotal</b>				<b>\$ -</b>	

## Estimated Costs Summary

Site Name: #11346 Shell Service Station

Description: Investigation

Item		Quantity		Rate	Total	Task Detail
<b>Point of Entry Treatment (POET) Systems</b>						
29	POET Design and Permitting	0	\$	15,380	\$ -	C43
<b>POET Subtotal</b>				\$	-	
<b>Groundwater Treatment System</b>						
30	Pump Installation (Per Well)	0	\$	15,541	\$ -	C18
31	Trenching Mob./Demob.	0	\$	41,195	\$ -	C19
32	100 Feet of Trenching: Treatment System to Extraction Wells	0	\$	21,452	\$ -	C19
33	Influent Manifold	0	\$	1,837	\$ -	C20
34	Influent Tank and Piping	0	\$	62,103	\$ -	C21
35	Optional Iron and Manganese Filter	0	\$	88,209	\$ -	C22
36	Dual Phase Extraction System	0	\$	146,222	\$ -	C23
37	Bio-Reactor GAC 2000#	0	\$	12,382	\$ -	C24
38	GAC 2000#	0	\$	72,682	\$ -	C24
39	Bio-Reactor GAC 5000#	0	\$	23,322	\$ -	C25
40	GAC 5000#	0	\$	108,785	\$ -	C25
41	Bio-Reactor GAC 10000#	0	\$	43,957	\$ -	C26
42	GAC 10000#	0	\$	176,879	\$ -	C26
43	Remediation Treatment System Building	0	\$	109,449	\$ -	C27
<b>Groundwater Treatment System Subtotal</b>				\$	-	
44	Lease Land	0	\$	-	\$ -	C28
45	Water Allocation Permit (For GWTS > 100M GPD)	0	\$	387	\$ -	C29
46	NJ NPDES Permitting	0	\$	15,307	\$ -	C30
47	O&M Manual	0	\$	34,950	\$ -	C31
<b>Well Installation, Pilot testing, and System Design and Install</b>						
<b>Subtotal</b>				\$	675,474	
<b>ORC-Advanced Injection Program</b>						
48	Permit-by-Rule to Inject	0	\$	4,187	\$ -	C44
49	ORC Injection Work Plan	0	\$	5,125	\$ -	C45
50	ORC Pre-Injection Program	0	\$	3,556	\$ -	C46
51	ORC Injection Point Field Activities	0	\$	2,898	\$ -	C47
52	ORC Injection Performance Monitoring	0	\$	18,322	\$ -	C48
53	ORC Injection Report	0	\$	7,520	\$ -	C49
<b>Subtotal</b>				\$	-	
54	Project Management	8%	\$	-	\$ -	C51
<b>ORC-Advanced Injection Program Subtotal</b>				\$	-	

## Estimated Costs Summary

Site Name: #11346 Shell Service Station

Description: Investigation

Item		Quantity	Rate	Total	Task Detail
<b>Annual Operation and Maintenance (O&amp;M)</b>					
56	Annual DPE O&M	0	\$ 89,104	\$ -	C33
55	Annual GWTS O&M	0	\$ 85,464	\$ -	C32
57	Annual GAC Carbon Change Out	0	\$ 3,673	\$ -	C34 and E
58	GWTS Quarterly Performance Report	0	\$ 5,590	\$ -	C35
	Subtotal			\$ -	
59	Project Management	8%	\$ -	\$ -	C51
	<b>Annual O&amp;M Subtotal</b>			<b>\$ -</b>	
<b>Annual Monitoring</b>					
60	Semi-annual Groundwater Monitoring and Sampling	2	\$ 14,905	\$ 29,811	C36
61	Semi-annual Surface Water Sampling	6	\$ 857	\$ 5,141	C50
62	Semi-annual Sediment Sampling	6	\$ 857	\$ 5,141	C50
63	Semi-annual Sampling Reporting	2	\$ 8,230	\$ 16,460	C37
64	Incremental Report Cost for Wells >4	14	\$ 1,000	\$ 14,000	
	Subtotal			\$ 70,552	
65	Project Management	8%	\$ 70,552	\$ 5,644	C51
	<b>Annual Monitoring Subtotal</b>			<b>\$ 76,196</b>	
	<b>Annual O&amp;M and Monitoring Subtotal</b>			<b>\$ 76,196</b>	
<b>Net Present Value</b>					
	Years of DPE Operation	0			
	Years of ORC Injection	0			
	Years of GWTS Operation	0			
	Years of Post-Restoration Monitoring	5			
	Discount Rate	3.0%			
66	0 Years of DPE O&M	0.00	\$ -	\$ -	
67	1 Year of ORC Injection	0.97	\$ -	\$ -	
68	3 Year of ORC Injection	0.92	\$ -	\$ -	
69	5 Year of ORC Injection	0.86	\$ -	\$ -	
70	0 Years of Land Lease	0.00	\$ -	\$ -	C28
71	0 Years of GWTS O&M	0.00	\$ -	\$ -	
72	5 Years of Monitoring	4.58	\$ 76,196	\$ 348,957	
73	Periodic Costs (5-Year Period)	0	\$ 3,825	\$ -	C38
	<b>NPV Subtotal</b>			<b>\$ 348,957</b>	
	<b>SUBTOTAL</b>			<b>\$ 1,024,432</b>	
	Contingency	30%		\$ 307,329	C51
	<b>TOTAL NPV REMEDIATION</b>			<b>\$ 1,331,761</b>	





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**REVISED SITE SUMMARY**  
**ID # - 11346 SHELL SERVICE**  
**STATION # 138490**  
**Ridgewood Village, Bergen County, New Jersey**

Prepared on behalf of:  
New Jersey Department of Environmental Protection (NJDEP)  
The Commissioner of the NJDEP  
The Administrator of the New Jersey Spill Compensation Fund

For:  
The Office of the Attorney General of New Jersey  
and  
Miller, Axline & Sawyer  
The Law Office of John K. Dema  
Berger & Montague  
Cohn Lifland Pearlman Herrmann & Knopf

Project No.: 003-01

January 2013



Revised Site Summary Report  
ID # - 11346 Shell Service Station # 138490  
January 2013

impacts to several surface water bodies located within the vicinity of the Site that include the Twinney Pond (1,750 feet northwest of the Site) and the Saddle River (1,500 feet east of the Site), have not been investigated. See Section 8.4.

#### **8.5.7 Summary**

Gasoline releases in 1987, 1995, and 1998 were reported from the gasoline USTs and associated fuel piping. Concentrations of benzene, MTBE, and TBA in groundwater down-gradient of the Site were observed to increase significantly subsequent to the 1995 and 1998 releases.

COCs released from the fuel system at the Site passed quickly into first groundwater. Once in groundwater, COCs migrated vertically through unconsolidated saturated sediments and into deeper fractured bedrock under the influence of a downward hydraulic gradient. This gradient was caused by recharge and pumping at WSWs. COCs migrated off-site to the south with groundwater flow in the direction of the Walthery public WSW located 700 feet south of the Site. MTBE may have also been drawn from the Site toward the Twinney Well, located 1,600 feet to the west-northwest of the Site. The Twinney Well was also impacted by MTBE in June 1987. During the time that both the Twinney and Walthery Wells were shut-down, it is likely that benzene, MTBE and TBA beneath and down-gradient of the Site, were drawn farther south of the Walthery Well in the direction of the active Paramus Well, located 2,500 feet to the south of the Site. The Paramus Well was impacted with MTBE in 1996.

It is likely that COCs migrated to the Walthery and Paramus Wells in the highly transmissive Z4 Bedrock Unit. Only one monitoring well has been installed in this unit (MW-42) and this well was installed to the southeast of the Site and not in the direction of the supply wells. Well MW-42 was installed after all three of the documented releases occurred. Therefore, monitoring wells have not been installed deep enough to monitor contaminant plumes that migrated vertically and thence to the south toward nearby WSWs.

Benzene, MTBE and TBA have been detected in soil, unconsolidated and bedrock groundwater in the vicinity of four neighboring UST facilities located between 600 and 1,400 feet to the northwest of the Site. However, a complete review of the environmental data for all these facilities has not been conducted. Due to the known contamination at these neighboring facilities, there is the potential for co-mingled COC plumes in this area.



Revised Site Summary Report  
ID # - 11346 Shell Service Station # 138490  
January 2013

13. Remediation performed to date may have effectively addressed on-site groundwater contamination. See Sections 6.4.3, 7.0, and 9.2.1.
14. Remediation performed to date has failed to effectively control the off-site migration of groundwater contamination and public WSWs. Contamination has migrated off-site and been detected in off-site groundwater monitoring wells. See Section 6.4.3.
15. Remediation performed to date has failed to effectively remediate off-site groundwater contamination. Off-site groundwater contamination persists. See Section 6.4.3.
16. Additional off-site investigation is required. The groundwater plume is not delineated to the south, southwest, east, and northeast of the Site. See Section 6.4.3.
17. Investigation of deeper groundwater zones is required. Contamination has been detected in the transmissive Z4 Bedrock Unit; however, only one groundwater monitoring well has been installed in this unit. Additional monitoring wells within the Z4 Bedrock Unit and deeper bedrock units are required. See Section 6.4.3.
18. Additional on-site remediation of groundwater is possibly required. See Section 9.2.1.
19. Additional off-site remediation of groundwater may be required. No off-site groundwater remediation has been conducted at the Site. The most recent contaminant concentrations detected off-site would not warrant the implementation of an off-site groundwater remediation system. However, based upon the results of additional investigation, particularly in the transmissive Z4 bedrock unit, an off-site groundwater remediation system may be required. See Section 6.4.3.
20. Releases pose a threat to deeper aquifers. Contaminants have been detected in the transmissive Z4 Bedrock Unit. However, only one monitoring well has been installed in this unit and deeper bedrock water quality conditions have not been investigated. See Sections 6.4.3, 8.3, and 8.4.
21. COC releases from the Site have impacted the Walthery Well, the Paramus Well, and possibly the Twinney Well. No other sources of MTBE contamination have been identified in the area of the Walthery and Paramus Wells. The East Saddle River is threatened by remaining contamination. Contamination released at the Site will continue to migrate with groundwater and the contamination may migrate beyond the delineation boundaries.